

Canadian National #1683

ST. HYACINTHE - SLEEPER

Preliminary Report
Final Report



Preliminary Report

CANADIAN NATIONAL RAILWAYS SLEEPER NO. 1683

"ST. HYACINTHE"

Neal Abernathy, Researcher

California State Railroad Museum
Department of Parks and Recreation

BRIEF HISTORY

Canadian National Railways Sleeper No. 1683, St. Hyacinthe, was one of a lot of 47 sleepers, buffet/parlor cars, and motor cars delivered to Canadian National in 1929 by Canadian Car & Foundry of Montreal. Fifteen of the sleepers were of a ten section, one drawing room, one compartment configuration and built after a standard Pullman design. These cars received road numbers of 1674 through 1688 and were named for Canadian cities beginning with the letter "S".

The St. Hyacinthe is typical of Pullman-type sleeping cars of the heavyweight era, roughly 1910 to 1930. It was originally assigned to trains in central Canada. An ice-activated air conditioning system was installed in 1936, but the car escaped the large-scale modernization program carried out by CN in the early 1950s.

During the last decade and a half of its service life, the St. Hyacinthe was generally assigned to trains running between Montreal and the Atlantic coast, due to the insufficiencies of the ice cooling system. Section sleepers had lost popularity with the public, who preferred the privacy of roomette accommodations. These factors led to the St. Hyacinthe being selected for retirement in 1971 when it was purchased at its scrap value price by the Pacific Coast Chapter of the Railway and Locomotive Historical Society. The car then made the 4,100-mile trip from Montreal to Sacramento and then to Bethlehem Steel in San Francisco, where it was painted as a Pullman. It was then donated to the State of California for inclusion in the California State Railroad Museum.

RESTORATION OPTIONS

The St. Hyacinthe is meant to be representative of the practical and luxurious sleeping accommodations of the heavyweight era, roughly 1910 to the mid-1930s. This criterion, combined with my evaluations of the restoration options, will form the basis for my recommendation as to the most appropriate restoration period.

Option #1: 1971-79

The exterior "restoration" by Bethlehem Steel under the auspices of the Pacific Coast Chapter of the Railway and Locomotive Historical Society represents the St. Hyacinthe as a Pullman. It is painted "Pullman green" with yellow (gold) lettering in the style of Pullman cars. The roof and underframe are painted black. The interior appearance is as the car was received from Canadian National. Evidence indicates that the car was painted by CN just prior to its sale. The interior is beige overall with the exception of the drawing room and compartment, which are green. There are five different types of upholstery used in the car, three kinds on the section seats alone.

This configuration represents the St. Hyacinthe as it never was in service. It misrepresents the car as a Pullman when it was in reality built by Canadian Car & Foundry for CN. Neither are the interior colors representative of any in-service paint scheme. Also, the condition of the interior paint is not acceptable for museum display. The paint is peeling in several places down to the original finish layer. The conditions of both the interior and exterior finishes dictate that the car will have to be stripped inside and out, irrespective of paint schemes to be used.

One advantage of this configuration is that the car would not have to be reupholstered or carpeted, and none of the fixtures would have to be replaced. The paint configuration, however, would be deceptive to the public as well as being representative of no period of the car's history. This would make it a very poor example not only of the heavyweight era, but also of the quality of the museum's restoration program.

Option #2: 1961-71

During the last ten years of the St. Hyacinthe's service life, it bore the standard Canadian National passenger scheme of the period. The sides of the car were white with a black window band, underframe, roof, and ends. The interiors of the vestibules were painted a bright royal blue. The bright red CN "worm" logo was painted near the "A" end on the right side and near the "B" end on the left side. The interior, during this period, was painted in shades of gray, blue-gray, green-gray, black, and white throughout the car. The interiors of the lavatories were the same royal blue as the vestibules. All of the compartment, drawing room, and cabinet doors were painted bright pink. All upholstery dates back at least to this period.

Once again, the advantage of this configuration is that the car would not have to be reupholstered or carpeted, and the present fixtures would not have to be replaced. A restoration to this period, however, would not be representative of the heavyweight era, when railroad passenger travel was at its peak but, rather, the declining years of railroad passenger service.

Option #3: 1954-61

This represents the period following Canadian National's systemwide modernization program. The paint scheme of this period is known as the "maple leaf" scheme. In this configuration, the car sides were black below the belt rail and Canadian National green, a near match to Pullman green, between the belt rail and roofline, with yellow stripes running the length of the car at the bottom edge, belt rail, and at the roofline. The car is lettered in the same yellow in the Roman style lettering, with Canadian National on the letterboard and the car name centered below the belt rail. The "maple leaf" company logo is painted on the sides at both ends of the car. It consists of a yellow circle enclosing a maple leaf, upon which is superimposed a red square with Canadian National Railways in yellow Gothic lettering. The car ends were Canadian National green, and the frame and roof were black.

The car's interior was light pink overall with white wainscoting and seat frames. The maple leaf design carpeting was probably installed at this time, as well as the green textured pile upholstery on the section seat backs. The other upholstery fabrics in the car appear to be of a later style, with the possible exception of the red leatherette upholstery on the men's lounge sofa.

Restoration to this period will entail sandblasting and repainting the exterior, stripping and painting the interior, reupholstering throughout the car, and cleaning the carpet. It may be necessary to replace carpeting in the drawing room and compartment. It appears that the present lampshades date at least to this period.

A restoration to this period would be more aesthetically pleasing than the later periods, but the interpretive problem would still remain. As stated before, the desire of the curatorial staff is to exhibit a car which will represent the heavyweight era. The 1954-61 time frame, however, encompasses a period of modernization and utilitarianism in which a car like the St. Hyacinthe was an unpopular anachronism.

Option #4: Mid-1940s to 1954

The dating of this configuration is approximate. 1945 is roughly the mid-point between the previous and following known modification dates. I am also assuming that the railroad would not have gone to the expense of renovating their passenger equipment until after the end of the Second World War. The paint scheme of this period was beige-pink overall with a buff clerestory, green wainscot and seat frames, and black window sills. The exterior was Canadian National green with black roof and underframe and with one of two then contemporary lettering configurations. The first possibility is the Roman-type lettering scheme. In this configuration, Canadian National was painted in gold on the letterboard in Roman lettering and St. Hyacinthe, in the same color and style but smaller lettering, centered on the sides below the belt rail. In the other possible configuration, there was no lettering on the letterboard. On the sides below the belt rail, the name St. Hyacinthe was painted in black-bordered gold Roman lettering. The Canadian National square logo was applied near each end of the car on both sides. The logo consists of a red square bordered with gold with Canadian National in gold Gothic lettering. The square was tilted to the left, and all gold areas in the logo were outlined with black. A pair of black-bordered gold stripes completed the

paint scheme, one below the belt rail, the other above the windows. These two schemes are also the choices for all earlier configurations of the car. To date, limited examination of the St. Hyacinthe's exterior has yielded no evidence of the red square logo. More physical research is in order to determine this, however.

A restoration to this mid-'40s period would entail stripping and painting of the interior and sandblasting and painting the exterior. The car would need reupholstering, recarpeting and, possibly, replacement of linoleum and window shades.

Option #5: 1936 to Mid '40s

1936 was the year in which the St. Hyacinthe was equipped with an ice-activated air conditioning system. The car at this time retained its original upholstery, carpeting, floor tiles, window shades, mica lampshades, and all other fittings and fixtures. Air conditioning vents were added to the clerestory, which was then painted a buff-yellow along with the berth interiors. The original section fans were removed. The remainder of the interior finish was a combination of dark natural walnut finish and matching woodgrain on the metal headboards and section arch mouldings. The headboards, berth undersides, and section end walls were decorated with appliqued pinstripes with designs at the corners of a shield overlaid by a maple leaf. These appliques were toned to look like inlays of contrasting woods. The berth numbers were appliqued in the same fashion. The upholstery had blue pinstripes on a sand background, and the carpeting had a blue pattern on a

sand background. The aisle of the "A" end of the car and the floors in the men's lavatory and smoking room were finished with alternate blue and sand rubber tiles.

The exterior configuration for this period would be the same as in option #4.

I feel that the 1936 configuration of the car represents the optimum restoration period. In this configuration, the St. Hyacinthe will represent the elegant flavor of first class rail passenger travel which was present during the heavyweight era. In this period, the car retained its original furnishings and finishes except for the minor changes necessitated by the addition of the air conditioning system. Our choice of this option will save us the necessity of returning the car to its original appearance, which would mean the comparatively major job of removal of the entire air conditioning system and fabrication and installation of the missing ventilators, as well as the duplication of the decorative motif applied on the section arches in the first generation.

Option #6: 1929-36

These years represent the St. Hyacinthe's first years of service, during which no modifications were made to the car. The exterior paint and lettering scheme in this period was the same as for options #4 and #5. The interior of the car was dark walnut finished with matching woodgrain on the steel headboards and section arch mouldings decorated with appliqued designs as in option #5. The same blue and sand upholstery, carpeting, and floor tiles were used as in option #5. The lighting fixtures resembled candles with mica shades, and the window shades were "figured blue Pantasote". The original

color of the clerestory was a bright shade of green, which carried into the berth interior, with appliqued floral designs on the arch framing.

To restore the car to this appearance, it would be necessary to remove the ice-activated air conditioning system, including all exterior duct work, ice bunkers, vents, and all access panels. The interior vents would have to be replaced with ventilators. Ventilators would have to be fabricated for the clerestory exterior, and an unknown amount of work would be necessary to remove all signs of the air conditioning system. This configuration would, of course, be the best representation of the archetypal heavyweight sleeper, as it would be the "as built" configuration. With present budgetary conditions, however, the removal of the air conditioning system would make the cost prohibitive.

RECOMMENDATION

The time period that the St. Hyacinthe is meant to represent is the heavyweight era, a period (roughly from 1910 to the mid-1930s) of luxurious and elegant rail travel. Two of our restoration options (options #5 and #6) adequately represent this period. Option #6 is the ideal interpretive period. It represents the heavyweight sleeper as it left the factory and as it appeared during its first years of service, at the height of the heavyweight era. In this configuration, the car was fully equal to the finest sleepers on the finest of the name trains. Unfortunately, adverse budgetary considerations must enter into the final decision regarding the restoration period. For this reason, I recommend restoration to the car's 1936 appearance. This configuration represents the St. Hyacinthe after installation of the ice-activated air conditioning system. This installation

caused the roof to be modified to enclose the duct work. Inside, the only change was the replacement of the clerestory ventilators with air conditioning vents. Because of the work done in the clerestory, it was repainted a buff color. The remainder of the car's interior surfaces were left in their original condition. We will then have a car representative of the desired period without the extra expense of removing the air conditioning system and finding replacements for parts that have been missing since 1936. Restoration of the car to any later period would result in a representation of the days when the heavyweight sleeper had already become an anachronism.

Restoration to this period will incur a higher cost than any of the later periods. This is due to the need for extensive stripping and refinishing, which will necessitate the removal and reinstallation of many components, as well as the expense for hiring an artisan to woodgrain those areas in which it is necessary. Relatively little expense would be incurred to prepare the interior surfaces for painting, however. It should be borne in mind that stripping the interior will remove the protective layer of varnish from the natural wood finish and, if paint is applied, it will enter the open grain of the wood and preclude any later restoration to a natural finish without extensive sanding.

Despite the cost obstacles, I feel that the museum has an obligation to the people of the State of California to restore the St. Hyacinthe, the only car which the public will be allowed to enter, to the period of optimum interpretive value, that being 1936.

CANADIAN NATIONAL RAILWAY SLEEPER NO. 1683

"ST. HYACINTHE"

Final Report

by

R. H. Denison
Restoration Researcher

California State Railroad Museum
Department of Parks and Recreation

March 1981

Preface

This is one of a series of reports on the California State Railroad Museum equipment. It is intended for "in-house" use and basically states what we did and why we did it. The St. Hyacinthe has been restored late in the restoration schedule. With limited time remaining in the restoration program and minimum research personnel, this report is by necessity an abbreviated one.

Tracings, paint sampling records, photographs, etc., are in the museum archives.

This report details the completion of the restoration of the Canadian National Sleeper No. 1683, "St. Hyacinthe", and should be considered as a conclusion to the "Preliminary Report", same subject. In the preliminary report, six restoration option periods were presented. These were:

1. 1971-79
2. 1961-71
3. 1952-61
4. Mid 1940s-1952
5. 1936-Mid 1940s
6. 1929-36

The period of mid 1940s-1952 was chosen as the period for best interpretation of the Pullman Sleeper Car period. This period provided several advantages as well as some disadvantages.

There was good documentation for this period, and the ice refrigeration unit would remain on the car. The car exterior could possibly carry the colorful red, gold, and black rectangular Canadian National Emblem near the car ends. The interior would need only reupholstering, recarpeting, striping, and repainting.

After the car entered the restoration shop October 5, 1980, the very limited early exterior paint research was extended to larger areas to determine striping patterns, actual colors of "Canadian National Green", and the placement of the rectangular Canadian National logo.

We could find no evidence of the rectangular logo at any of the four places it would have been located. With no evidence of this logo, we assumed the car carried the other paint scheme of the period, which had "Canadian National" centered on the car letter board. When paint sampling was done on the letter board, we found several layers of this lettering and were able to make tracings of several letters to determine characteristics of the alphabet used and between-letter spacing. From this information, the car was correctly relettered.

The exterior of the restoration presented fewer problems than did the interior. Mohair upholstery material of the quality and pattern for a first class sleeping car of the selected period is no longer made. There was also a possibility that the wood finish might be destroyed if the interior paint was stripped. Time and funding constraints were also a factor. The fact that this is a car to which the public will have access and that the present upholstery material is a long wearing one, able to stand considerable wear and tear, was also considered. In the final outcome, the decision was made to reupholster only the drawing room and compartment, removing the red leatherette covering and replacing them with a fabric closely matching that of the open sections.

the doors to the drawing room and compartment were also removed so that plexiglass panels may replace them. This will allow full view of these rooms but prevent access.

With the decision to basically leave the interior as is, the car was cleaned and all interior paint touched up.

A further decision was made to make up only a limited number of berths. This decision will allow museum visitors to see the car in both the sleeping configuration and the open seating as the car would be in daylight or early evening hours as the car is being converted for sleeping arrangements. It also allows the removal of any less than top notch seats or seat backs and placing those in the made up berths where they will not be seen. In the absence of Canadian National blankets, Pullman blankets from the museum's artifact collection will be used. This use appears logical as these blankets may have been used if the car entered the northeastern United States.

To set up a rocking motion to simulate the feeling of a heavyweight car in motion, a one horsepower motor with a worm gear speed reducer was purchased. This combination gives 30 rpm on the output shaft. A special mounting bracket was designed and built by the restoration shop. The bracket was firmly attached to a truck frame, and the motor-speed reducer unit mounted so the drive shaft was perpendicular to the car centerline. To the shaft was fastened a single lobe cam cut from 1-inch thick AISI 4140 steel.

Immediately above and in line with the cam, a bracket was welded to the car body. In this bracket, a 4-inch diameter follower with roller bearings was

placed. As the motor drives the cam, the follower, when the lobe comes up, lifts the car side, tilting the entire car. As the lobe passes the follower, the car drops back down. This repeated action gives the car a swaying motion. This sway very closely simulates the normal rocking motion of the car as it rolls over the rails at normal road speed.

This motion was developed through "cut and try" methods until the motion obtained was similar to that remembered by those who had ridden the St. Hyacinthe or similar heavyweight cars. Three separate cams were cut, tried, and modified until the correct cam contour was developed. Once this was achieved, the final cam was cut and hardened for long use under the heavy loads it will be subjected to.

In its final appearance, the St. Hyacinthe is an impressive car and a fine example of the heavyweight car. The gold "Canadian National" lettering and striping on the Canadian National green with black running gear and underside is an eye catching display piece.

Following restoration, on December 5, 1980, the St. Hyacinthe was taken into the History Building and positioned for permanent display. The car now awaits installation of the electronic equipment to provide light and sound effects to simulate actual cross country movement of the train.

Our contacts with the Canadian National Railways and Canadian National Railways Museum were reestablished for the final restoration. We greatly appreciate their helpful suggestions and patience in answering our numerous questions. Their help was invaluable in our research for this restoration.

PASSENGER CAR SPECIFICATIONSDate: March 3, 1979By: N. AbernathyCar: Canadian National Railways No. 1683, "St. Hyacinthe"Builder: Canadian Car & Foundry Builder # or Plan #: -----Date Built: 1929 Date Ordered: ---- Gauge: StandardType of Car: Heavy Weight Sleeper Passenger Capacity: 45Type of Seats: Pullman Number of Sleeping Berths: 25Number of Rooms, Compartments, etc.: 1 compartment & 1 drawing roomType of Construction: Steel (constructed from Pullman specifications)Type of Platforms/Vestibules: enclosed vestibulesType of Roof: clerestoryType of Floor: Steel & concrete Type of Frame: steelType of Body Bolsters: steel (built up) Type of Couplers: type "E"Type of Draft Gear: P.F.-6 Type of Brakes: U-12-BC (U.C.)Extreme Length of Car: 84' 4 1/2" Length over Buffers: 84' 4 1/2"Length over End Sills: 75' 6" Extreme Width: 10' 3" Width over Side Sills: 9' 9 5/8"Extreme Height from top of Rail: _____ Height from Top of Rail: 14' 2"Light Weight: 182,880 Lbs. Extreme Wheelbase: _____Type of Trucks: commonwealth 6-wheelTruck Wheelbase: 11' Type Wheel Bearings: FrictionWheel Dia.: 36" Wheel Manufacture & Dates: _____Type of Safety Equipment: Fire Extinguishers, BrakeType of Heating: vapor (steam)Type of Air Conditioning: "ICE" air conditioning added 1936Lavatory Facilities: 2 (flush)Type of Lighting: electric Number of Lighting Fixtures: _____

(over)

PASSENGER CAR SPECIFICATIONS

Type of Signal/Train Communication Equipment: _____

Type of Electrical Generator: _____

Obvious Historic Patches/Modifications to Car: (use add'l sheet if req'd)

1936 - Air conditioner ducting added on roof. (did not go thru large scale modernization program of CN in early 1950's)

Identification Numbers/Markings on Carbody, trucks, etc.: (use add'l sheet if req'd)

Bilingual (English-French) marking in Vestibules

Attach CSRM Engineering Drawing reduction print and Chronology for further information.

Research material in CSRM archives.

Car is a typical Pullman of 10 sections; one compartment and one drawing room. Though built by CC&F for CN, it is built to Pullman specifications.

Chronology

1929	Built by CC&F
1936	Ice air conditioning added
1929-1956	Generally operated in central Canada
1956-1971	Generally operated between Montreal and Atlantic Coast
1971	Retired from service and purchased by PCC of R & LHS
1971	Painted as a Pullman car by Bethlehem Steel (San Francisco)
1980	Donated to CSRM
1980(Oct-Dec)	in CSRM restoration shop.
1980(Dec. 5)	moved into CSRM History Bldg.

December 1, 1983

ADDENDUM

Add this sheet to the "Final Report" of the restoration research report of the Canadian National Railway Sleeper No. 1683, "St. Hyacinthe".

From the research conducted on the exterior paint it was found that the best match of "Canadian National Green" was Sherman Williams acrylyd acrylic enamel, dark green custom mix MG#J5-6635. Accordingly the car exterior was painted with this mix.

At the end of the first paragraph page 2 of this report add the notation, "See Addendum" and file this page with the "St. Hyacinthe" Final Report.



Dick Denison

California State Railroad Museum
(Former Sypv. Restoration Research)

Photo #1

Canadian National Railway Sleeper No. 1683 "St. Hyacinthe" in service between Prince George, Jasper & Prince Rupert, Fall 1970.
(Fred A. Stindt Collection)

Photo #2

The "St. Hyacinthe" undergoing repainting at Bethlehem Shipyard, San Francisco, 1972-1973. (Fred A. Stindt photo)

Photo #3

Central California Traction Company moves the "St. Hyacinthe" into temporary storage at Sacramento after completion of the 4,103 mile trip from Montreal to Sacramento, November 2, 1971. (Fred A. Stindt photo)

Photo #4

The restored "St. Hyacinthe" moves into the CSRM History Building, December 5, 1980.
(CSRM photo)



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Canadian National Railway Sleeper No. 1683 "St. Hyacinthe" in service between Prince George, Jasper & Prince Rupert, Fall 1970.
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Photo #2

The "St. Hyacinthe" undergoing repainting at Bethlehem Shipyard, San Francisco, 1972-1973. (Fred A. Stindt photo)



Photo #3

Central California Traction Company moves the "St. Hyacinthe" into temporary storage at Sacramento after completion of the 4,103 mile trip from Montreal to Sacramento, November 2, 1971. (Fred A. Stindt photo)

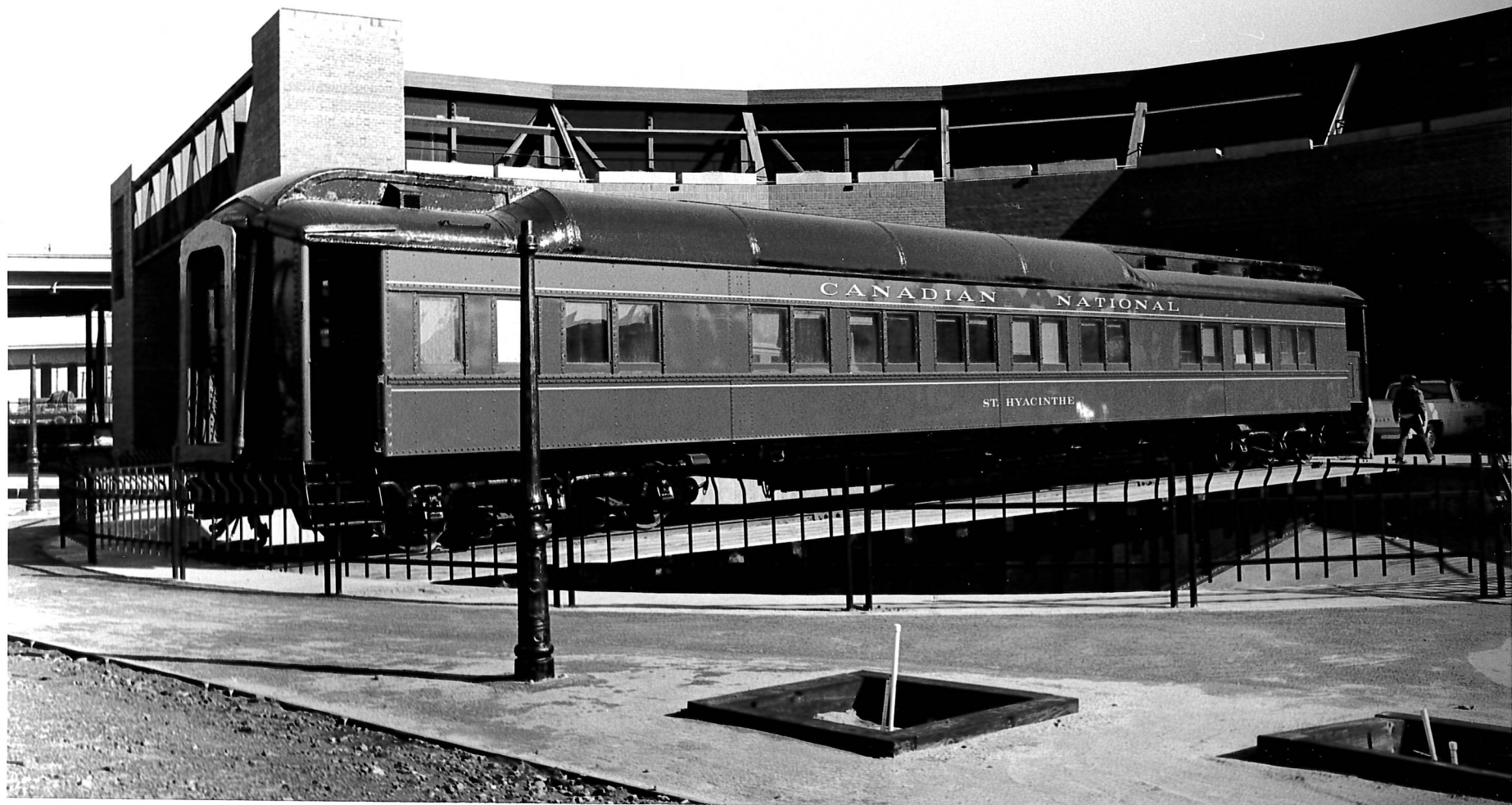


Photo #4

The restored "St. Hyacinthe" moves into the CSRM History Building, December 5, 1980.
(CSRM photo)